

SENATE S. 1268

Resolve creating a special commission to examine the health impacts of electromagnetic fields*

Executive Summary

- All of today's wireless devices send and receive data through two-way [microwave radiation](#) that exposes our citizens to biologically active electromagnetic fields (EMFs).
- [Current FCC guidelines](#) governing public exposure to wireless radiation were set in 1996 and have not been updated to reflect use of today's wireless technology.
- The public exposure limits are based on a half hour of exposure from one device. They do not account for the 24/7 exposures emitted by cell towers, street antennas, wireless devices and routers today, or the cumulative effects from constant exposure over time.
- The 1996 guidelines were set by electronic and electrical engineers and do not take into account the knowledge possessed by scientists, doctors and public health experts who specialize in human biology.
- These outdated guidelines were based solely on a thermal theory; i.e. how much heat it takes to raise the temperature of one's skin.
- Today's science proves there are many adverse biological effects at the non-thermal level, and our outdated guidelines still allow radiation thousands of times higher than where biological effects are occurring.
- Today's devices are tested at a distance away from the body; the [fine print](#) indicates using them on the body (i.e., holding a cell phone, putting it to one's head, using a laptop or tablet in the lap and touching it with one's hand) may cause exposure to radiation higher than even the FCC's allowable limits.
- Since public policy has not caught up to the science, industry continues to aggressively promote products and infrastructure that expose the public to toxic levels of microwave radiation including the utility "smart" grid being piloted in Worcester, and the small cell antennas/distributed antenna systems (DAS) being rolled out to support 5G and the Internet of Things.
- Wireless technology has never been safety tested for children, fetuses, the elderly or those with known health compromises. Today's science proves these sub-populations are especially vulnerable to wireless radiation. Many in Massachusetts are already becoming ill.

See summaries below for the current science as well as international, U.S. federal and Massachusetts EMF activities. Financial impact and information on common points of confusion are also provided.

Current Science

- [The U.S. National Toxicology Program](#) is completing analysis of a multi-year, \$25M study on electromagnetic radiation and health. They have already reported peer-reviewed findings of DNA damage, brain and heart tumors at the non-thermal level. More results are expected in 2017. This supports findings of epidemiological studies on wireless radiation that show increased cancer risks, especially for children.
- Thousands of [studies world-wide](#) are reporting further evidence of long-term biological harm at the non-thermal level including autism, Alzheimer's, infertility, neurotoxicity, genotoxicity and more.
- In the short-term, evidence is linking this form of unshielded radiation to a new debilitating disease called [electrosensitivity](#) (ES) that commonly presents with headaches, insomnia, nausea, dizziness, tinnitus, tingling, tachycardia, learning disabilities, impaired cognitive function, nose and ear bleeds, behavior issues and more.

International Initiatives

- See the [EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses](#) which indicates, "During the last 20 years, more than 20 position papers and resolutions regarding EMF and health have been adopted by EMF researchers and physicians. These include the Vienna EMF Resolution, Austria, 1998; Stewart Report, UK, 2000; Salzburg Resolution, Austria, 2000; Freiburg Appeal, Germany, 2002; Catania Resolution, Italy, 2002; Irish Doctors' Environmental Association Statement, Ireland, 2005; Helsinki Appeal, Finland, 2005; Benevento Resolution, Italy, 2006; Venice Resolution, Italy, 2008; Porto Alegre Resolution, Brazil, 2009; Russian National Committee on Non-Ionizing Radiation Protection Resolution, Russia, 2001; International Doctors' Appeal, Europe, 2012; and the Report of the Standing Committee on Health, Canada, 2015."
- Many other countries allow far less wireless radiation exposure to their citizens than the U.S., and many have governance in place to minimize public health risks. See the Environmental Health Trust for a summary of [international policy actions on wireless](#).

- Leading world scientists have submitted [an appeal](#) to the United Nations and World Health Organization to protect the public from wireless radiation. They outline a plan to do so until the industry brings biologically safe technology to market. Columbia University's Dr. Martin Blank provides a three-minute introduction to the appeal [here](#).

U.S. Federal Activity

- After the first oncologist stated his patient died from tumors on the side of her brain that lined up with the antennas in her cell phone, the Cellular Telephone Industry Association (CTIA) commissioned [a \\$28M multi-year study](#) that showed wireless technology is carcinogenic. The CTIA and FCC suppressed evidence of harm in the 1990s and did not inform the public.
- In 1996, the FCC established thermal guidelines for radiation exposure based on engineering standards, not scientific biological evidence that shows harm at the non-thermal level.
- In 1997, the industry influenced the passage of the Telecommunications Act and lead local municipalities to believe there could be no recourse if citizens became ill or expressed concerns over radiation emissions from cell towers. They also buried disclaimers in the [fine print](#) of cell phone manuals indicating users should keep the devices at a distance from their bodies, else exceed the FCCs public radiation exposure guidelines.
- Harvard University's Law School Center for Ethics published a report detailing these events and more. See [Captured Agency: How the Federal Communications Commission is Dominated by the Industries it Presumably Regulates](#).
- EMFs were addressed in a 2008 congressional hearing where scientists presented findings of increased penetration of cell phone radiation in the brains of children: https://www.youtube.com/watch?v=h_YhKblPtOo
- In 2012 the [BioInitiative Report](#) was published, summarizing evidence of harm from studies all over the world. In 2013 the U.S. Government Accountability Office instructed the FCC to "formally reassess the current RF energy exposure limit, including its effects on human health." More than 900 public comments from doctors, scientists, the American Academy of Pediatrics, the American Academy of Environmental Medicine and more have been submitted under [Docket 13-84](#). The FCC has not responded.
- The Environmental Health Trust summarizes additional [Policy activities](#) including statements from the EPA, Department of the Interior, Radio

Frequency Interagency Workgroup, U.S. Science Advisory Board and more.

- The United States Access Board's IEQ Indoor Environmental Quality Project indicates electromagnetic sensitivities may be considered **disabilities** under the ADA:

<https://www.access-board.gov/research/completed-research/indoor-environmental-quality/introduction>

- The Access Board recommends the following **accommodations**:

<https://www.access-board.gov/research/completed-research/indoor-environmental-quality/recommendations-for-accommodations>

- Job Accommodation Network (JAN) is one of several services provided by the U.S. Department of Labor's [Office of Disability Employment Policy \(ODEP\)](#). JAN offers the following **Accommodation Ideas for Electromagnetic Sensitivity**:

<http://askjan.org/soar/other/electrical.html>

- Fifth-generation technology, or 5G, will not go through buildings, walls, ceilings, floors, etc., like 3G and 4G do. To get the faster speeds that 5G promises for the Internet of Things, the industry will need to put small cell antennas at close range to make those connections. 5G will still use 3G and 4G to operate, so existing antennas and cell towers will remain; 5G will add to the existing radiofrequency radiation infrastructure with toxic millimeter waves (MMW). We will have more antennas emitting hazardous radiation 24/7/365 at eye-levels where we live, work, go to school and play.
- On June 20, 2016, just after the National Toxicology Program announced EMFs cause DNA damage, brain and heart tumors, former FCC Chairman Tom Wheeler indicated in a [speech](#) at the National Press Club the priority with 5G is to be first to market, regardless of public health or safety. He states, "Turning innovators loose is far preferable to expecting committees and regulators to define the future. We won't wait for the standards to be first developed in the sometimes arduous standards-setting process or in a government-led activity."
- Israeli and New York lawyer Dafna Tachover has developed electrosensitivity from wireless technology and in September 2016 testified before the FCC's Disability Advisory Committee. See her five-minute testimony here: <https://www.youtube.com/watch?v=qg0H63GLkU&feature=youtu.be> Ms. Tachover is also building [We Are The Evidence](#) (WATE) to document that this issue is affecting constituents from all professions and stations in life.

- The industry is fast-tracking two bills in Washington, D.C. to remove control from local municipalities to install small cell antennas/distributed antenna systems (DAS) throughout our neighborhoods every four to 12 houses. If not stopped, these bills will set the infrastructure for the Internet of Things, and allow hazardous radiation to be emitted on our citizens at street level 24/7. See [S.19 MOBILE Now Act](#) and [S.88 DIGIT Act](#).

Massachusetts Initiatives

- In the 2015/16 legislative session, the Joint Committee on Public Health reported out favorably [S. 1222. An Act creating a special commission to study the health impacts of electromagnetic fields](#). Scientists, doctors, technologists and concerned citizens sent in testimony supporting the need to educate and protect citizens from wireless technology hazards.
- A panel of world experts held a briefing at the State House in 2015 to encourage legislation giving citizens the right to know wireless radiation is hazardous. See leading scientist and Nobel Peace Prize Co-Laureate Dr. Devra Davis and retired long-time Microsoft Canada President Frank Clegg address the legislature [here](#).
- Following the above legislative briefing, the panel of world experts held a standing-room only public forum in Framingham:
 - [Dr. Devra Davis, Ph.D in Framingham, MA talks about wireless radiation](#)
 - [Frank Clegg speaking more casually to the Framingham forum audience with details on what industry and other countries are doing, including France's recent ban on wi-fi in preschools](#)
 - [Child Psychologist, School Consultant, Researcher and Author Dr. Catherine Steiner-Adair speaking of the developmental, social and emotional impact technology is having on our children](#)
 - [Dr. R.S. Sharma from India on health and environmental impacts of mobile phones and other wireless devices](#)
 - [Janet Newton, President of EMR Policy Institute speaks on wi-fi dangers for rooftop workers](#)
 - [Framingham Board of Health Director Mike Hugo on a desire to implement right-to-know labeling in retail stores, and wired technology in schools](#)

- [Dr. Devra Davis, Q&A with OB/GYN on dangers of Wi-fi on children and pregnant women](#)
 - [Dr. Devra Davis, Q&A with Ashland school board member on dangers of Wi-Fi & children](#)
- National Grid is piloting the utility “smart” grid in Worcester, installing microwave radiation emitting meters on homes without informed consent. The project is being examined by the [MA Attorney General’s Office](#) for cost overruns and public health implications.
 - Senator Michael Moore has introduced [S.1864: An Act relative to utilities, smart meters, and ratepayers’ rights](#) to give citizens the choice of using a utility “smart” meter or a traditional non-radiation-emitting mechanical analog meter.
 - Harvard’s Professor Lawrence Lessig is representing Berkeley, CA pro bono in their attempts to inform the public on the right to know what the fine print disclaimers say in mobile device manuals. The city ordinance has passed but the industry is fighting it. Senator Julian Cyr has introduced two bills to give Massachusetts citizens the right to know too: [S.107](#) An Act relative to disclosure of radiofrequency notifications (requires warning labels on radiation-emitting products) and [S.108](#) An Act relative to the safe use of hand-held devices by children (requires posting of safety notices at point of sale).
 - [Representative Carolyn Dykema](#) has introduced HD.2454 An Act relative to best management practices for wireless in schools and public institutions of higher education (to be posted soon).
 - School districts throughout the Commonwealth are beginning to seek guidance on EMF protections in school. Parents and administrators in Ashland, Worcester, Framingham, Brookline, Dover-Sherborn, Medway, Pepperell, Lexington, Southborough, Belmont and elsewhere are examining the issue.
 - Maryland’s Department of Health and Mental Hygiene has issued the first-in-the-nation [Wi-Fi Radiation in Schools Report](#) advising hard-wiring with wi-fi turned off. Dr. Robert Knorr, MA Department of Public Health, Bureau of Environmental Health Director is also drafting public health fact sheets on EMFs.
 - Local boards of health in Ashland, Southborough and Pepperell have begun discussing measures to protect their citizens from EMFs.
 - Residents in Hamilton and Weston are currently looking for protections from impending cell tower and small cell antenna installations.

- Towns like Randolph have already begun putting [by-laws](#) in place to retain local decision-making control for wireless communication systems as industry pushes to take that right away from our municipalities through federal bills [S.19 MOBILE Now Act](#) and [S.88 DIGIT Act](#). Other towns are examining proactive measures too.
- A child at the prestigious Fay School in Southborough has been diagnosed with electromagnetic sensitivity caused by the school's industrial strength wi-fi system. The school declined to grant reasonable accommodations so there is a [federal ADA lawsuit](#) underway in Worcester. Other children are also suffering symptoms at the Fay School.
- Ashland Public Schools has become the [first in the nation](#) to adopt [Best Practices for Mobile Devices](#) to protect students and staff. The non-industry funded scientists tell us hard-wired internet connections with the wi-fi antennas turned off is the only safe solution, but this was a courageous first step in the absence of higher authorities to advise them. Parents and teachers' unions throughout the country are discussing Ashland's Best Practices and encouraging their schools to do the same.
- Ashland Public Library is the first in the nation to host a six-part film and discussion series on [Electromagnetic Radiation and Health](#).
- Ashland Public Library is also the first in the nation to put on loan an Acoustimeter so residents and employees can measure the amount of radiation emitted in their homes, offices, schools and places of leisure. WACA-TV helped to produce a [23-minute public service video](#) to show how to use the meter and offer suggestions for remediation.
- Pepperell Community Media has released a five-part cable series on [The Dangers of Wi-Fi](#) that is being aired in communities all over the United States.

Financial Impact

The [science](#) is showing that one of the biological effects of wireless radiation's constant pulse is that it causes a leakage in the cell membrane at the voltage-gated calcium channels (VGCCs) which control many of our bodies' systems. This leakage creates a chemical reaction outside the cell wall that produces a very destructive free radical called **peroxynitrite**.

Peroxynitrite is linked to not only cancer and heart disease, but to 40 other escalating chronic illnesses that have more than doubled since 1990. Data culled from government databases on disease stemming from peroxynitrite show economic impact for medical costs, lost income and medical research is estimated to be **over [\\$2.5 trillion annually](#)**.

Common Points of Confusion

When first joining the conversation on the health effects of EMFs it is easy to get confused and overwhelmed by conflicting information. Please see [EMF Points of Confusion vs. Fact](#) to help make sense of what you will find in your research, or what you might hear from industry representatives.

With your help, this problem is solvable. The International EMF Scientists (www.emfscientist.org) have already laid out a plan in their [Appeal](#) to the World Health Organization and the United Nations. We each just have to own our part of the solution.

Thank you for reviewing this information. Please contact technology safety educator Cece Doucette for additional information at c2douce@gmail.com or 508-881-3878.



* Note: The information contained in this document also applies to the following Massachusetts Session 190 EMF-related bills:

- [S.1864](#) An Act relative to utilities, smart meters, and ratepayers' rights (gives people the no-fee choice of keeping their non-radiation-emitting water, gas and electrical meters instead of "smart" utility meters; Senator Moore).
- [S.107](#) An Act relative to disclosure of radiofrequency notifications (requires warning labels on radiation-emitting products; Senator Cyr).
- [S.108](#) An Act relative to the safe use of hand-held devices by children (requires posting of safety notices at point of sale; Senator Cyr).
- **HD.2454** An Act relative to best management practices for wireless in schools and public institutions of higher education (asks the Massachusetts Department of Elementary and Secondary Education to set wi-fi standards for all schools; not yet assigned to committee, Representative Dykema).
- Maryland has a similar bill in their legislature this session too, [House Bill 866](#): AN ACT concerning Primary and Secondary Education – Health and Safety Guidelines and Procedures – Digital Devices.